

signals:  $V_0$ ,  $V_1$ ,  $W_0$  and  $W_1$ , as will be described later), 12 and 16 are adders. Reference numerals 13 and 14 denote interleavers. Reference numeral 15 denotes a second decoder for calculating the logarithm likelihood ratio from the receiving signal:  $L_{cy}$  (corresponding to receiving signals:  $V_0$ ,  $V_1$ ,  $W_0$  and  $W_1$ , as will be described later). Reference numeral 17 denotes a deinterleaver. Reference numeral 18 denotes a first judging device for judging the output of the second decoder 15 to output an estimated value of the original information bit list, and reference numeral 19 denotes a second judging device for hard-judging the  $L_{cy}$  (corresponding to receiving signals:  $V_2...$ ,  $W_2...$ , as will be described later) to output an estimated value of the original information bit list.--